

REMARKS

Applicant requests reconsideration and allowance of this application in view of the following remarks.

In response to the statement in Paragraph 1 of the Office Action as to the non-elected claims, applicant notes that this is not a final Office Action. Therefore, the current “withdrawn” status of claims 11-19 and 25-27 is believed to be appropriate.

As to the double patenting rejection, applicant will provide a terminal disclaimer upon the indication of allowable subject matter.

Claims 1 and 38

Applicant respectfully traverses the rejection of claims 1 and 38 under Section 103 as being unpatentable over Nishino in view of Rossen. Applicant respectfully submits that this rejection is improper for the reasons discussed below.

Briefly, although Nishino shows gas flow out of the adsorbers back to the compressor chamber, (a) this gas flow is not oxygen-enriched gas, but rather nitrogen-rich gas that is being purged from the adsorber, and (b) this gas does not go back into the compressor itself but rather is sent through the compressor chamber to exhaust. Nishino does not teach a compressor operatively connected to the oxygen source to receive the oxygen enriched gas therefrom. Nor does the second reference teach this arrangement. Also, it would not be obvious to rearrange the parts of Nishino to form applicant’s claimed structure. Therefore, the rejection should be withdrawn.

The rejection is predicated on the statement in the Office Action that “fluidically the compressor is located” between the two tanks 59/60 and 61. However, oxygen-enriched air is never fed into Nishino’s compressors, as required in the pending claims. Claim 1, for example, specifies that the compressor is connected to the oxygen source to receive the at least 50%

oxygen by volume gas therefrom. This structure is not found in Nishino, as can be seen from the following discussion of the operation of Nishino.

Nishino compresses ambient air and sends it to a selector valve 58. The selector valve 58 is set to direct the compressed air to either adsorber 59 or adsorber 60. While one adsorber is being fed compressed air and is outputting oxygen rich air, the other adsorber is being reverse fed some oxygen rich air and is outputting, to exhaust, the nitrogen etc. that was adsorbed therein previously.

Thus, there can be flow in the lines connecting the selector valve 58 with the adsorbers 59 and 60, in either direction depending on the setting of the selector valve. But there is never flow in both directions along one line at the same time. Any oxygen rich air goes in one of two places: first, to the storage tank 61 and thence to the mask; or second, to the second adsorber, then to the selector valve, then to exhaust 65 in the compressor chamber 39, then out the compressor chamber via the exhaust 45. Oxygen-enriched air is never fed into the compressors 47, because they take only ambient air via the fan 46 and the inlet 52. They do not take air generally from the compressor chamber 39. Thus, it can be seen that in Nishino, oxygen-rich air is not fed into the compressor.

The rejection is based on Nishino as modified by Rossen to add a "radial" compressor. Thus, it appears that the Examiner believes that Nishino is identical to applicant's claimed structure other than in the "radial" feature. As discussed immediately above, however, Nishino is not otherwise identical--it must be modified further (than with Rossen alone) to come up with applicant's structure. For this reason alone, then, the rejection should be withdrawn.

The Office Action suggests a "rearrangement" of the elements recited in applicant's claim 1. This rearrangement is not workable. Putting Nishino's compressor between the concentrator and the storage tank would remove the ability to pressurize the air being fed to Nishino's concentrator, thus making the concentrator unsatisfactory for its intended purpose, as is demonstrated below.

MPEP 2143.01 states: "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." Citing In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1084).

In this regard, there are several problems with the proposed rearrangement of Nishino's parts.

First, Nishino's concentrator would not work. A concentrator (adsorber) needs a pressurized air input. The sieve beds of a concentrator have pressure and purge cycles. Without a compressed air input, the air would not be forced through the beds at a high enough pressure to flow through and out of the beds. Also, the air coming out of the beds needs to be at a high enough pressure to fill the downstream storage tank (present in both Nishino and applicant) which is under a higher pressure than atmospheric. Even Nishino apparently believes in the need for a compressor upstream of the concentrator--he puts one before the concentrator on the pressure cycle, and it certainly would not be there were it not needed.

In addition, without a compressed air input to the concentrator, its purge cycle would not work. A reverse flow of air through the sieve beds is needed to purge the beds. Again, this is evidenced in Nishino as he puts a compressor before the concentrator on the purge cycle--it would not be there were it not needed.

The proposed modification thus would render the Nishino apparatus "unsatisfactory for its intended purpose". As a result, there is no suggestion or motivation to make the proposed modification. In re Gordon, supra. Therefore, the claimed structure is not obvious.

Claims 2-4 and 7-8

Applicant respectfully traverses the rejection of claims 2-4 and 7-8 under Section 103 as being obvious over Nishino and Rossen in view of Beysel.

Claim 2 recites an apparatus according to claim 1, wherein the oxygen-enriched gas is prioritized by a portion thereof being capable of being fed to a person and a portion thereof being capable of being fed to the radial compressor, and the prioritization includes a determination of a minimum oxygen concentration of the oxygen enriched gas by an oxygen sensor. The operation of the radial compressor is terminated when the enriched oxygen gas is below a predetermined oxygen level.

Beysel does discuss the concept of prioritization. However, Beysel prioritizes between a mask and a storage tank. Beysel does not discuss controlling operation of a compressor by the prioritization process. Claim 2 specifies that the operation of the radial compressor is terminated when the enriched oxygen gas is below a predetermined oxygen level. Since Beysel does not teach or suggest controlling a compressor (a significantly different operation than shutting off flow to a tank), then Beysel can not add the missing subject matter so as to render claim 2 obvious in view of the suggested combination of references. Therefore, claim 2 is allowable.

Claim 3 recites an apparatus according to claim 1 including a buffer tank that is operatively connected to the oxygen source and to the radial compressor. The oxygen-enriched gas is prioritized by a portion thereof being capable of being fed from the buffer tank to a person and a portion thereof being capable of being fed from the buffer tank to the radial compressor. The prioritization includes a determination of the oxygen concentration of the oxygen enriched gas by an oxygen sensor and the operation of the radial compressor being terminated when the enriched oxygen gas is below a predetermined oxygen level.

As noted above, Beysel does discuss the concept of prioritization. However, Beysel does not disclose a buffer tank that feeds a compressor as is specified in claim 3. Therefore, Beysel can not add the missing subject matter so as to render claim 3 obvious in view of the suggested combination of references. Therefore, claim 3 is allowable.

Claim 4 recites an apparatus according to claim 1 wherein the oxygen-enriched gas is prioritized by a portion being capable of being fed to a person and a portion being capable of

being fed to a compressor, and wherein the prioritization includes terminating the flow of the oxygen-enriched gas to the high-pressure storage container when the enriched oxygen gas is below a predetermined oxygen level.

As noted above, Beysel does discuss the concept of prioritization. However, Beysel prioritizes between a mask and a storage tank. Beysel does not discuss prioritizing between a mask and a compressor. Since Beysel does not teach or suggest prioritizing between a mask and a compressor, then Beysel can not add the missing subject matter so as to render claim 4 obvious in view of the suggested combination of references. Therefore, claim 4 is allowable.

Claim 7 recites an apparatus according to claim 3 wherein the oxygen source is an oxygen concentrator, and wherein the enriched oxygen gas is at least 85% oxygen by volume. Claim 8 recites an apparatus according to claim 4 wherein the oxygen source is an oxygen concentrator, and wherein the enriched oxygen gas is at least 85% oxygen by volume. Each one of these claims is allowable at least for the reasons set forth above with respect to its base claim.

Claims 5-6, 9-10, 20-24, and 28-37

Applicant respectfully traverses the rejection of claims 5-6, 9-10, 20-24, and 28-37 under Section 103 as being obvious over Nishino and Rossen and Beysel in view of Odagiri. Each one of these claims is allowable at least for the reasons set forth above with respect to its base claim. In addition, each one of these claims adds further features and limitations that provide a separate basis for patentability. For example, claim 28 specifies that the radial compressor contains a plurality of cylinders each having a piston therein, and the pistons are radially arranged around a crankshaft. The oxygen-enriched gas is sequentially compressed by each piston. Each sequential cylinder has a smaller compressible area than the previous cylinder, and each sequential cylinder is located in a non-adjacent position circumferentially about the crankshaft. As illustrated in Figure 11 herein, this positioning of the radial compressor's pistons and cylinders provides that the forces are generally balanced, thereby effectuating efficient transfer of energy. Since there is more efficient transfer of energy within the system, less energy is

required to operate the device, and a smoother and quieter operation is provided. This structure is not shown in any of the references. Therefore, claim 28 is allowable.

All of the claims of this application being allowable, applicant requests issuance of a notice of allowability.

The Examiner is requested to telephone applicant's undersigned attorney at (216) 622-8578 if there are questions on this matter.

Respectfully submitted,

Date:

July 6, 2004

By:

Paul E. Szabo

Paul E. Szabo, Reg. No. 30,429
(216) 622-8578
Customer No. 24024